

REMARKS

Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1 and 4-9 are currently being prosecuted. The Examiner is respectfully requested to reconsider the rejections in view of the Amendments and Remarks as set forth hereinbelow.

CLAIM FOR PRIORITY

It is gratefully acknowledged that the Examiner has recognized the Applicant's claim for foreign priority. In view of the fact that the Applicant's claim for foreign priority has been perfected, no additional action is required from the Applicant at this time.

DRAWINGS

The Examiner has objected to the Formal Drawings for not illustrating the features set forth in claim 2. At the Examiner will note, claim 2 has been cancelled. The Examiner's objection has been obviated. In view of the cancellation of claim 2, it is respectfully submitted that the drawings comply with the requirements of the USPTO. If the Examiner has any further objections to the Formal Drawings please contact the undersigned as soon as possible so that appropriate action may be taken. No further action is believed to be necessary at this time unless the undersigned receives a notice from the Examiner.

ACKNOWLEDGEMENT OF INFORMATION DISCLOSURE STATEMENT

The Examiner has acknowledged the Information Disclosure Statement filed on January 31, 2006 and April 10, 2006. Initialed copies of the PTO/SB/08A have been received from the Examiner. No further action is necessary at this time.

OBJECTION TO THE CLAIMS

Claim 1 stands objected to in view of the comma in the characterized phrase. As the Examiner will note, the characterized phrase has been cancelled. The Examiner's objection has been obviated.

REJECTION UNDER 35 USC 112

Claims 1-9 stand rejected under 35 USC 112 as being indefinite. This rejection is respectfully traversed.

As the Examiner will note, the claims have been amended to provide proper antecedent basis for the claimed elements. The complete name for each element is now set forth in each section of the claims that is later referred to by "said." Claim 2 has been cancelled. The Examiner's rejection based on 35 USC 112 has been obviated.

REJECTION UNDER 35 USC 103

Claims 1-9 stand rejected under 35 USC 103 as being unpatentable over Roth et al, US 4,965,864 in view of Wright, US 4,864,849 and Ohki et al, US 5,302,872. This rejection is respectfully traversed.

As set forth on page 4 the second full paragraph of the Examiner's Office Action, the Roth et al patent does not teach any particular type of piston position sensor. In addition, Roth et al does not provide a teaching of using air-core coils.

It is respectfully noted that the Roth et al patent is directed to a linear motor. A piston is provided in a cylinder and the piston is reciprocally moved by supplying electricity to coils, which are provided outside of the cylinder and equally spaced. Since the piston is linearly and reciprocally moved by supplying electricity to the coils, a detecting coil for detecting the position of the piston is not required in the linear motor.

The Wright patent is directed to a viscometer. Viscosity of a fluid is measured on the basis of a time period for reciprocally moving a piston, which is moved by supplying electricity to a drive coil. The position of the piston can be determined on the basis of a variation in the inductance, which is caused in the coil by a ferromagnetic member.

The Ohki et al patent is directed to a drive unit of a linear motor. Air-core coils are used as coils for driving a moving member.

It is respectfully submitted that the present invention is directed to a combination of elements wherein the air-core detecting coil (53) is fitted close to the axial end faces of the air-core electromagnetic coils (50a, 50b) which are faced to each other. The yokes (26a, 26b)

are provided to the axial end faces of the detecting coil (53) and the outer yoke (52) is provided on the outer circumferential face of the coil (53). The combination of features as set forth in the claims as amended are not disclosed and suggested by the Roth et al, Wright or Ohki et al patents.

In the present invention, by the combination of elements as set forth in the claims, a magnetic circuit is provided wherein magnetic fluxes generated from the moving member (10) pass the yoke (26a), the outer yoke (52) and the yoke (26b), are formed. The number of magnetic fluxes, which interlink the detecting coil (53), can be increased , so that the induced voltage of the detecting coil (53) can be increased and the detecting sensitivity can be improved. The combination of features as set forth in the claims is not taught by the Roth et al, Wright or Ohki et al patents.

As the Examiner knows well, to establish a *prima facie* case of obviousness, three basic criteria must be met.

- 1.) First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
- 2.) Second, there must be a reasonable expectation of success.
- 3.) Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As set forth in section 2143 of the M.P.E.P., the following are examples of basic requirements of a *prima facie* case of obviousness:

“The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper “functional approach” to the determination of obviousness as laid down in *Graham*. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.”

One of these exemplary rationales that may support a conclusion of obviousness set forth in subparagraph “C” relates to use of known technique to improve similar devices (methods, or products) in the same way.

“To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

(1) a finding that the prior art contained a “base” device (method, or product) upon which the claimed invention can be seen as an “improvement;”

(2) a finding that the prior art contained a “comparable” device (method, or product that is not the same as the base device) that has been improved in the same way as the claimed invention;

(3) a finding that one of ordinary skill in the art could have applied the known “improvement” technique in the same way to the “base” device (method, or product) and the results would have been predictable to one of ordinary skill in the art; and

(4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

The rationale to support a conclusion that the claim would have been obvious is that a method of enhancing a particular class of devices (methods, or products) has been made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in other situations. One of ordinary skill in the art would have been capable of applying this known method of enhancement to a “base” device (method, or product) in the prior art

and the results would have been predictable to one of ordinary skill in the art. The Supreme Court in *KSR* noted that if the actual application of the technique would have been beyond the skill of one of ordinary skill in the art, then using the technique would not have been obvious. *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.” (*emphasis added*)

The Applicant respectfully submits that the Examiner has failed to articulate each and every one of items (1) to (4) above as is required.

In view of the above, the Applicant respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness.

Therefore, claims 1 and 4-9 are now in condition for allowance.

REQUEST FOR INTERVIEW

If the Examiner has any questions with regard to this application please contact the undersigned so that an interview can be arranged in connection with this application.

CONCLUSION

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination.

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but to merely show the state of the art, no comment need be made with respect thereto.

In view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims are respectfully requested.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. A full and complete response has been made to the outstanding Office Action. The present application is now in condition for allowance.

A prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

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